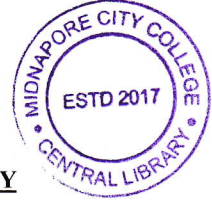


**PG (CBCS)**  
**M.Sc. Semester-I Examination, 2022**  
**ZOOLOGY**  
**PAPER: ZOO 102**  
**HISTOCHEMISTRY AND ANIMAL PHYSIOLOGY**



Full Marks: 40

Time: 2 Hours

**Write the answer for each unit in separate sheet**

**UNIT - I**  
**HISTOCHEMISTRY**

**GROUP-A**

**1. Answer any TWO from the following questions: 2×2=4**

- a) Cite two examples of fixation artifact.
- b) State the composition of Bouin's fixative.
- c) Differentiate between natural and synthetic mounting media.
- d) Mention the advantages of formalin as fixative.

**GROUP-B**

**2. Answer any TWO from the following questions: 2×4=8**

- a) Enumerate the applications of Gomori reaction for alkaline phosphatase.
- b) Mention the characteristics of an ideal fixative. Distinguish between additive and non-additive fixative. 2+2
- c) Write a short note on mordants and mordanting.
- d) Give the composition of any one nuclear fixative. What do you mean by secondary fixation for electron microscopy? 2+2

**GROUP-C**

**3. Answer any ONE from the following questions: 1×8=8**

- a) Distinguish between stain and dye. Elaborate the chemical classification of dye. Comment on vital dye. 2+4+2
- b) Write short notes on-
  - i. Amphoteric dye
  - ii. Double staining
  - iii. Metachromatia
  - iv. Advantage and application of indirect immunohistochemistry.

**P.T.O.**

(2)

**UNIT - II**  
**ANIMAL PHYSIOLOGY**



**GROUP-A**

4. Answer any **TWO** of the following questions:

2×2=4

- a) Mention a similarity and dissimilarity between the structure of haemoglobin and myoglobin. State the function of myoglobin.
- b) What do you mean by neurogenic and myogenic hearts?
- c) How are the first and the second heart sounds generated in mammals?
- d) Deduce the relationship between hypoxia and erythropoietin.

**GROUP-B**

5. Answer any **TWO** of the following questions:

4×2=8

- a) Depict the cell-lineage of erythropoiesis in mammals by the help of a pictorial flow-chart
- b) Describe the sequential steps of haemostasis.
- c) What is oxygen toxicity in sea divers? What are its symptoms? What measure should be adopted to prevent this disorder? 1+1+2
- d) State the role of vitamin C, vitamin E, superoxide dismutase and catalase in the removal of ROS from our body.

**GROUP-C**

6. Answer any **ONE** of the following questions:

8×1=8

- a) "Haldane effect takes the opposite perspective of Bohr effect"- justify. What do you mean by ECG? Precisely characterize the different waves of a normal ECG. 4+1+3
- b) Explain physiological comfort zone of man with reference to temperature and relative humidity of air. What is a counter-current heat-exchanger (CCHE) in animal body? State the significance of CCHE in thermoregulation in Arctic dolphin. 4+1+3

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